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# MINERAL INDUSTRY SURVEYS

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## BISMUTH IN THE THIRD AND FOURTH QUARTERS OF 1996

Domestic bismuth consumption decreased during the second half of 1996, relative to consumption in the first half of 1996 and the second half of 1995. The year 1995, for which a revised consumption figure is shown in table 1, was a record high year for bismuth consumption in the United States.

The largest decrease for the second half and also for the whole year was in the chemicals sector. One area of increase was for bismuth shot used in cartridges for waterfowl hunting. The shot alloy is 97% bismuth and 3% tin.

Mexico, Peru, and China had abundant bismuth to supply the world market at low prices (Mining Journal, 1996a and Mining Journal, 1996b). This apparent indicator of adequate supply kept prices down in spite of the expected shutdown (by February 1, 1998) of the only domestic bismuth-producing plant, the Omaha, NE, lead refinery of ASARCO, Inc.

The New York dealer price, as published by Platt's Metals Week, continued to fall during the third and fourth quarters, averaging about \$3.45 per pound for the second half and ending the year at \$3.30 per pound.

The Defense Logistics Agency sold 185,448 pounds of

bismuth for \$580,000 on September 24, 1996. This completed sales of bismuth from the National Defense Stockpile for fiscal year 1996 (American Metal Market, 1996a). The first bismuth offering for fiscal year 1997 was on October 23, 1996. No sale resulted that day, but 84,000 pounds was sold on November 13, 1996, for \$258,000 (American Metal Market, 1996b).

### Update:

The dealer price continued to decline during the first quarter of 1997. It was \$3.20 per pound at the end of the quarter.

### References Cited

- American Metal Market, 1996a, DLA sells final bismuth of year: American Metal Market, v. 104, no. 187, September 26, p. 12.  
———1996b, DLA sells bismuth: American Metal Market, v. 104, no. 222, November 14, p. 14.  
Mining Journal, 1996a, Minor metals in July: Mining Journal, v. 327, no. 8390, August 9, p. 113.  
———1996b, Minor metals in September: Mining Journal, v. 327, no. 8398, October 4, p. 274.

TABLE 1  
SALIENT BISMUTH STATISTICS 1/

(Kilograms)

	1995	1996				Total
		First quarter	Second quarter	Third quarter	Fourth quarter	
Consumption	2,150,000 r/	428,000 r/	365,000 r/	341,000	387,000	1,520,000
Exports 2/	261,000	12,100	54,700	17,200	66,700	151,000
Imports for consumption	14,550,000	441,000	418,000	310,000	326,000	1,490,000
Price per pound, dealer, end of period 3/	\$4.20	\$3.97	\$3.55	\$3.45	\$3.30	XX
Stocks, end of period, consumer	390,000	119,000 r/	128,000 r/	166,000	122,000	XX

r/ Revised. XX Not applicable.

1/ Data are rounded to three significant digits, except prices.

2/ Includes bismuth, bismuth alloys, and waste and scrap, bismuth content.

3/ Price data from Platt's Metals Week.

TABLE 2  
BISMUTH METAL CONSUMED IN THE UNITED STATES, BY USE 1/

(Kilograms)

Use	1995	1996				Total
		First quarter	Second quarter	Third quarter	Fourth quarter	
Chemicals 2/	1,320,000 r/	251,000	215,000	178,000	211,000	855,000
Bismuth alloys	544,000	105,000	91,200	96,300	108,000	401,000
Metallurgical additives	257,000	63,100	50,400	58,000	59,500	231,000
Other	27,000	9,000	9,000	8,000	9,000	35,000
Total	2,150,000 r/	428,000	365,000	341,000	387,000	1,520,000

1/ Data are rounded to three significant digits, may not add to totals shown.

2/ Includes industrial and laboratory chemicals, cosmetics, and pharmaceuticals.

TABLE 3  
U.S. IMPORTS FOR CONSUMPTION OF BISMUTH METAL, BY COUNTRY 1/

(Kilograms)

Country	1995	1996										Total
		June	Second quarter	July	August	September	Third quarter	October	November	December	Fourth quarter	
Belgium	636,000	38,000	167,000	86,900	33,700	3,630	124,000	17,000	69,500	35,300	122,000	584,000
Bolivia	28,300	--	--	--	--	--	--	--	--	--	--	--
Canada	83,900	2,450	48,800	2,710	2,920	6,080	11,700	4,240	5,800	2,430	12,500	80,800
China	82,600	--	18,700	--	21	27,700	27,800	34,400	--	--	34,400	151,000
Germany	1,360	80	93	105	10	--	115	--	--	90	90	498
Hong Kong	21,500	15,800	15,800	--	--	--	--	--	--	--	--	15,800
Japan	1,350	--	600	--	435	--	435	--	640	--	640	1,680
Korea, Republic of	10,000	--	--	--	--	--	--	--	--	--	--	--
Mexico	444,000	50,500	127,000	32,800	5,000	48,400	86,200	74,500	9,320	18,900	103,000	453,000
Peru	10,900	--	--	--	--	--	--	--	--	--	--	19,500
United Kingdom	131,000	3,650	39,600	15,000	30,000	15,000	60,000	15,000	15,500	23,500	54,000	189,000
Other	265	--	--	--	--	--	--	--	--	--	--	--
Total	1,450,000	110,000	418,000	138,000	72,100	101,000	310,000	145,000	101,000	80,200	326,000	1,490,000

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 4  
U.S. EXPORTS OF BISMUTH METAL, ALLOYS, AND WASTE AND SCRAP, BY COUNTRY 1/

(Kilograms, metal content)

Country	1995	1996										Total
		June	Second quarter	July	August	September	Third quarter	October	November	December	Fourth quarter	
Argentina	--	91	92	--	--	--	--	--	--	--	--	137
Australia	--	197	197	--	--	--	--	--	--	--	--	197
Belgium	157,000	9,210	27,200	--	--	--	--	--	38,300	--	38,300	65,500
Brazil	32	--	--	--	--	--	--	--	--	--	--	50
Canada	43,200	1,680	21,400	146	5,490	10,200	15,800	3,220	3,960	5,700	12,900	59,500
China	30,300	--	--	--	--	--	--	--	--	--	--	--
Dominican Republic	112 r/	--	--	--	111	117	228	504	--	--	504	1,150
Finland	--	--	--	472	--	--	472	--	--	--	--	472
France	15,500	--	3,480	--	--	--	--	--	--	--	--	5,380
Germany	--	--	21	--	--	--	--	--	476	--	476	497
Guatemala	--	--	--	--	--	--	--	14,200	--	--	14,200	14,200
Ireland	414	--	--	--	--	--	--	227	--	--	227	227
Korea, Republic of	--	--	3	60	--	--	60	--	--	--	--	63
Mexico	363	--	--	--	--	--	--	51	--	--	51	51
Netherlands	307	--	--	--	--	--	--	--	--	--	--	209
Singapore	2,320	--	--	--	--	--	--	44	--	--	44	144
Switzerland	--	--	2,220	--	--	--	--	--	--	--	--	2,220
Thailand	--	45	45	--	--	--	--	--	--	--	--	45
United Kingdom	9,680	--	--	--	596	--	596	--	--	--	--	596
Other	2,210 r/	--	--	--	--	--	--	--	--	--	--	--
Total	261,000	11,200	54,700	678	6,190	10,300	17,200	18,200	42,700	5,700	66,700	151,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.